

**ANALYSIS OF CHILD FATALITIES IN VIRGINIA REPORTED AS ALLEGED  
ABUSE OR NEGLECT**

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## Purpose of the Study

The aim of this research was to improve understanding of the problem of fatalities due to child maltreatment, and to inform the development of effective strategies for preventing such fatalities. From July 1, 1999 to June 30, 2000, the Virginia Department of Social Services (VDSS) collected information about child fatalities in Virginia that were reported as alleged abuse and neglect. The researchers were asked to analyze these data for patterns of perpetration, with particular attention to substance abuse involvement, presence of a biologically unrelated adult in the house, previous involvement with social services, and over-representation of African-American children. Subsequent conversations between the researchers and staff at VDSS suggested further variables of interest: parental mental illness, socio-economic status, victim disability, parental military employment, and geographical area. In addition, the Virginia Attorney General's office has been interested in child maltreatment fatalities, with particular interest in services to the families and actions taken in regards to the victims' siblings, as well as geographical and racial over-representation.

## Background and Significance of the Study

Throughout the advanced industrial countries in recent years, high profile cases of child maltreatment fatalities involving children known to child protective agencies have put these agencies under intense scrutiny, both internally and externally. Internally, child protective agencies have sought better understanding of child maltreatment and of their own policies and procedures. This has been the case in the U.S. as well as in other industrial countries and was the topic of much discussion at a recent international conference entitled *Positive Systems of Child and Family Welfare*. High profile cases in Virginia provided impetus for this study of child fatalities reported as abuse and neglect.

In 1998, it was estimated that 1,100 children in the United States died as a result of maltreatment, either abuse or neglect, based on deaths reported to CPS agencies and other agencies, including coroners' offices and fatality review boards (U.S. Department of Health and Human Services, 2000). True numbers remain unknown, but research suggests that child maltreatment fatalities are underreported (Ewigman, Kivlahan, & Land, 1993; U.S. Advisory Board on Child Abuse and Neglect, 1995). National data on fatality due to child maltreatment for 1998 indicate that 59.0% of the deaths were associated with physical abuse, 57.3% were associated with neglect, and 25.2% involved both physical abuse and neglect (U.S. Department of Health and Human Services, 2000). Some researchers have found subdural hemorrhage as a result of blunt trauma or violent shaking as the major cause of maltreatment-related child fatalities (Krugman, 1995).

There is clear evidence that risk of death due to maltreatment decreases with age (U.S. Department of Health and Human Services, 2000; McClain, Sacks, Froehlke, & Ewigman, 1993). In 1998, over three-quarters (77.5%) of victims in the U.S. were less than five years of age, with 37.9% of all victims being under one year of age. Only 7.3% of child fatality victims are older than ten years (U.S. Department of Health and Human Services, 2000).

The findings are less clear about gender differences in child fatalities due to child maltreatment. The 1998 data indicate that slightly more males are victims than females (53.8% and 46.2% respectively). However, this trend is not found across the ages, as more victims between the ages of 6 and 9 are likely to be female, 63.0% compared with 37.0% (U.S. Department of Health and Human Services, 2000).

In the United States, African-American children are over-represented in the child welfare system, and among children whose deaths are judged to be due to maltreatment. Morton (1999)

reports that in 1995, African-American children comprised 40 percent of the child fatalities found to be due to maltreatment. It is not clear whether this finding of over-representation is due to the increased vulnerability of African-American children, or to race-based bias in reporting and investigation.

No clear profile of the perpetrator emerges from the research literature. The 1998 data indicate that fatality victims of child maltreatment are most frequently maltreated by one or both of their biological parents (80.6%), with 44.3% of the deaths attributed to either the male or female parent acting alone (U.S. Department of Health and Human Services, 2000). The presence of a biologically unrelated adult in the home increases the risk of maltreatment, but no risk has been associated with related adults in the household (Smithey, 1998; Stiffman, Schnitzer, Adam, Krus, & Ewigman, 2002; Stiffman et al., 1999). National data for 1998 indicate that the perpetrators of fatalities are considerably younger than maltreatment perpetrators in general. Nearly two-thirds (62.3%) are younger than 30 years of age, compared with 38.7% of all maltreatment perpetrators (U.S. Department of Health and Human Services, 2000). No significant gender differences have been found when perpetrators of maltreatment fatalities are compared with maltreatment perpetrators in general. Females are more likely to be the perpetrators in both instances, with 59.7% of the fatalities being perpetrated by females and 60.2% of maltreatment perpetrators in general being female (U.S. Department of Health and Human Services, 2000). Fatalities where the mother is implicated tend to be due to neglect. Females are most often held responsible when the death of the child is due to bathtub drowning, a fire started by unsupervised children, dehydration, and starvation (Margolin, 1990).

Although several maternal characteristics have been associated with fatal injury in young children, there are some inconsistencies in findings. Maternal characteristics that have been

associated with child maltreatment fatalities include young maternal age (Brenner, Overpeck, Trumble, DerSimonian, & Berendes, 1999; Overpeck, Brenner, Trumble, Trifiletti, & Berendes, 1998; Scoler, Mitchel, Jr., & Ray, 1997; Siegel et al, 1996; Winpisinger, Hopkins, Indian, & Hosteteler, 1991); less than 12 years of education (Brenner et al., 1999; Overpeck et al., 1998; Scholer et al., 1997; Winpisinger et al., 1991); late or no prenatal care (Brenner et al., 1999; Cummings, Theis, Mueller, & Rivara, 1994; Overpeck et al., 1998; Scholer et al., 1997; Siegel et al., 1996); unmarried parents (Brenner et al., 1999; Scholer et al., 1997; Siegel et al., 1996; Winpisinger et al., 1991); and black race (Brenner et al., 1999; Overpeck et al., 1998; Siegel et al., 1996; Cummings et al., 1994). One recent research project found that living with only one biological parent does not increase the risk of fatal child maltreatment (Stiffman et al., 2002). Parental mental health problems, especially parental substance abuse, have been found to be associated with fatal child maltreatment (Reder & Duncan, 1999). A review of the data on fatalities due to maltreatment suggests that a lower socio-economic status (SES) is a predictor of child abuse and neglect, and there is no empirical evidence that these findings are the product of a bias predisposing toward overestimates of child maltreatment among those with lower SES (Drake & Zuravin, 1998).

Research indicates that the majority of child fatalities due to maltreatment involve children and families that have never come to the attention of the local child protective agencies (Anderson, Ambrosino, Valentine, & Lauderdale, 1983; U.S. Department of Health and Human Services, 2000). When the aggregate statistics for prior contact with CPS agencies are examined, it is found that only 3.9% of the children had been returned to their family prior to their death and only 2.7% of the victims were reported to be in foster care at the time of their death. In addition, 18.7% of the families of child maltreatment fatalities had received family

preservation services in the five years prior to the deaths (U.S. Department of Health and Human Services, 2000). In fact, under-utilization of community support services has been found to be associated with child maltreatment fatalities (Anderson, Ambrosino, Valentine, & Lauderdale, 1983).

Although neither race nor ethnicity was found to be a significant factor in predicting shaken baby syndrome (Sinal, Petree, Herman-Giddens, Rogers, Enand, & Du Rant, 2000), an analysis of the research literature indicates that children of color and boys are more prone to severe physical child abuse injury and that those injuries are more likely to be perpetrated by males. The male perpetrators tend to be extremely stressed or enraged fathers or biologically unrelated male caretakers who primarily assault infants and very small children by beating their heads and bodies, violently shaking them, intentionally suffocating them, immersing them in scalding water, or performing other brutal acts. In addition, the age of the victim is positively associated with the severity of the injury. Specific triggers that have been identified as occurring just prior to the fatal assault include a baby's inconsolable crying, feeding difficulties, a toddler's failed toilet training, and highly exaggerated parental perceptions of "disobedient" behaviors. However, some rage-based assaults are triggered by stimuli other than the child, with domestic violence appearing to be a significant factor in abuse deaths (U.S. Advisory Board on Child Abuse and Neglect, 1995).

Although few conclusions can be drawn from existing research into child fatality due to maltreatment, there are indications that further research is needed. There are a number of variables that would appear to promise fruitful avenues for investigation. The presence of a biologically unrelated adult in the home appears to increase the likelihood of maltreatment leading to fatality, as does substance abuse by adults caring for the child. The risks associated

with adults in the home with other mental health-related problems warrant further study. The risk of child fatality due to maltreatment decreases as the child becomes older, but little is known about how risk factors vary by age of the child. Gender differences also appear worthy of further investigation. Little attention has been given to neighborhood and regional differences in child maltreatment fatalities. The troublesome issue of racial over-representation requires further study. These and other variables require further exploration in order to enhance understanding of the problem of fatalities due to child maltreatment, and to facilitate the development of effective strategies for preventing such fatalities.

### Questions for Research

1. How do reported cases of child fatalities with founded dispositions differ from the reported cases of child fatalities with unfounded dispositions, in terms of child characteristics, family characteristics, nature of allegations, perpetrator characteristics, prior DSS involvement, and social indicators of neighborhood characteristics?
2. What mix of child characteristics, family characteristics, nature of allegations, perpetrator characteristics, prior DSS involvement, and neighborhood characteristics predict whether maltreatment will be found in child fatalities reported as abuse or neglect?
3. What extra information is gained by geographic mapping of child fatalities reported as abuse or neglect?

Child characteristics studied included age; race; gender; and special biological, psychological, and social characteristics. Family characteristics included age of mother, living arrangements, number of siblings, military attachment, and special characteristics of household. Perpetrator characteristics included number of perpetrators, age of perpetrator, sex of perpetrator, race of perpetrator, identity of perpetrator, and special characteristics of perpetrator. Aspects of

case processing studied include referrer type, previous CPS complaint on victim, status of previous complaint on victim, previous CPS complaint on siblings, status of previous complaints on siblings, previous removal of victim from family, previous removal of siblings from family, open case with VDSS, and siblings removed after victim death. Social indicators of neighborhood should include such indicators as economics, employment, residential stability, and family composition.

### Methodology and Data Analysis

The research was based on analysis of existing data collected for non-research purposes on 59 CPS reports of child fatalities received by VDSS between July 1, 1999 and June 30, 2000. Twenty of these cases were determined to be unfounded (preponderance of evidence of abuse or neglect not found), 36 determined to be founded (preponderance of evidence of abuse or neglect found), two determined to be invalid, and one was still pending. Data were collected on 55 of these cases, 20 cases determined to be unfounded, 33 cases determined to be founded, one pending case, and one case for which report status was missing.

### Data Collection

Data for the study were taken from two sources over several months, by four members of the research team, from late August through early December, 2001:

- Data compiled by VDSS staff on the 59 CPS reports of child fatalities made during the study period.
- Hard copy case files of 55 CPS reports of child fatalities made during the study period. For various reasons (file with the criminal justice system, file not located, file too incomplete to use), case files were not read on four of the 59 CPS reports.

Originally, the researchers had intended to use the OASIS management information system maintained by VDSS for further data collection. That idea was abandoned after attempts were made to retrieve data from this system on the first several cases reviewed. Reports on the cases under review were received during the first year that OASIS was operative and therefore not fully implemented. The OASIS files that were reviewed contained no additional information over what was found in the hard copy files.

As is the consistent report of researchers using agency case records for research purposes, the researchers also found the hard copy files to be quite variable in terms of completeness. In addition, the files were collected for purposes other than research, and the researchers had to search what were sometimes very large files for data that were not organized according to research purposes. The Child Fatalities Data Collection form used by the researchers to collect data from the records was designed to coincide with a Fatalities Questions form obtained from VDSS, but, unfortunately, fewer than a handful of hard copy case files had that form in them. Complete data were easily collected from the few files that included a completed version of this form.

Child Fatalities Data Collection Form. One challenge that outside researchers face when using agency records for data collection is their lack of familiarity with agency records, and, therefore, difficulty in designing a fit between the agency records and the research data collection instrument. Certainly that was a challenge in this research project. A data collection instrument was designed in March, 2001 and approved by the Virginia Commonwealth University (VCU) Institutional Review Board (IRB) in April, 2001. In June, 2001, when the hard copy case files began to arrive at VDSS central office, a member of the research team did preliminary data collection on a few cases, and met with Linda Struck, VDSS, to determine any

modifications that needed to be made to the data collection form. In the course of reviewing early records, this member of the research team found the Fatality Questions form in a case file. The Child Fatalities Data Collection Form was lengthened and modified to more clearly fit with the Fatality Questions form. Revised drafts of the Child Fatalities Data Collection Form were circulated to Linda Struck and Rita Katzman, VDSS, and further revised based on their feedback. Variables of interest to the Attorney General's office were added. The revised form was approved by the VCU IRB in August, 2001.

The revised Child Fatalities Data Collection Form (Appendix A) was highly structured and designed to simplify and ensure consistency of data collection. The instrument assigned a study case ID for each case. It asked for DSS Region; information about the disposition of the case; dates of fatality and complaint; address of fatality; age, sex, race of victim; marital status of parents; age and education of mother and father; income and employment; military attachment; primary cause of death; referral source; previous complaints, dispositions, and CPS actions on victim and siblings; special characteristics of deceased child; living arrangements and characteristics of household; services provided prior to and following death of victim; number of siblings; identity of perpetrator(s); age, sex, race, and education of perpetrator(s); criminal and central registry checks on perpetrator(s); legal action taken against perpetrator(s); and special characteristics of perpetrator(s). The instrument was designed to accommodate two perpetrators. In hindsight, given the variability in the records, it would have been good to include a scale for completeness and integrity of the case file.

Unfortunately, many of the variables that were added to the Child Fatalities Data Collection Form in the revision process were missing in most hard copy case files. Fewer than five case files included information on father's education and family income. Fewer than 25% of

the case files included information on mother's education, receipt of TANF, whether mom was at work at the time of the fatality, education of alleged perpetrator(s), whether criminal check was done on alleged perpetrator, and whether central registry check was done on alleged perpetrator. Half or fewer of the case files had information on father's age, whether the family had earned income, whether the family received government assistance, number of adults in household employed, whether the family had received services from VDSS in past two years, and whether the family received services after death. Fewer than 75% of the case files included information on characteristics of the household, whether the case was open to VDSS, and characteristics of the perpetrator. For most cases, explicit information was not found in the case files to answer the questions about whether available or unavailable resources could have prevented the fatality, and researchers made judgments on those issues. The reliability of those judgments is questionable, and no inter-rater reliability checks were made. For this reason, these data are not reported.

In addition to the data collected on the Child Fatalities Data Collection Form, a separate list was kept that included the case ID, deceased child's name, and address where the fatality occurred. This form has been kept separate from the Child Fatalities Data Collection Form.

Human Subjects Issues. The research was approved by the VCU IRB and by VDSS. The researchers made use of existing records and had no contact with human subjects. The only potential risk to human subjects is a risk that confidentiality could be breached because two identifiers, the deceased child's name and the address where the fatality occurred, were recorded by the researchers. The child's name and address have the potential linkage to surviving family members, but the confidentiality of records has been protected both during and after the data were collected. The data collection forms have been kept in a locked file during transportation and in a locked file cabinet in one of the researcher's offices since collection. The separate list

that includes case identification number has been stored separately from the Child Fatalities Data Collection Form. No client identified data appears in this report.

### Data Analysis

A comprehensive database was created using SPSS (Statistical Package for the Social Sciences, Version 10). In addition to storing all the currently available data, this database could accommodate any additional cases or new variables that may be added to it in the future. Descriptive statistics were utilized to summarize the data and present the study findings in a comprehensible, manageable form. Frequency counts and percentages were produced for each categorical variable. Ranges and medians were used for the few continuous variables. Modes were sometimes reported to clarify patterns in the data. Chi square was sometimes used to test the null hypothesis that two variables were independent. A significance level of .05 was arbitrarily established for concluding that the null hypothesis of independence could be rejected and a statistically significant relationship between variables existed. Discriminant function analysis was used to examine what combination of variables best predicts whether a child abuse fatality report would be founded or unfounded. The original design of the study called for geographic mapping of the child fatalities with social and economic data. Unfortunately, social and economic data for Virginia from the 2000 census is not yet available. Geographic mapping with 1990 data would be of questionable value and, consequently, was not performed. The researchers recommend geographic mapping when the 2000 census data is available and the preparation of a report addendum.

### Findings

Fifty-five (55) cases reported to VDSS as possible child maltreatment fatalities between July 1, 1999 and June 30, 2000 were examined. Thirty-three cases (58.9%) were founded; 20

cases (35.7%) were unfounded, one case was pending, and status was missing for one case. As shown in [Table 1](#), eleven (20.0%) reports came from the Central region, 23 (41.8%) reports came from the Eastern region, eleven (20%) reports came from the Northern region, six (10.9%) reports came from the Piedmont region, and four (7.3%) reports came from the Western region. Of the founded reports, nine (27.3%) came from the Central region, 14 (42.4%) came from the Eastern region, five (15.2%) came from the Northern region, three (9.1%) came from the Piedmont region, and two (6.1%) came from the Western region. The proportion of founded reports varied by region: 81.9% of reports in the Central region were founded, compared to 63.6% in the Eastern region, 45.5% in the Northern region, and 50% in both the Piedmont and Western regions.

#### Cause of Death

Data were collected on the primary cause of death according to the Medical Examiner ([see Table 2](#)). In most cases only a single cause was identified, but in a few cases more than one cause was identified, therefore, the total in Table 2 is greater than 55. All reports with the following causes of death were *founded*: stabbing, internal injury, skull fracture, drowning, burns/scalds, sex abuse, other abuse, abandoned soon after birth, and other neglect. All reports with the following causes of death were *unfounded*: SIDS, medical neglect, fire, hypothermia, and other. Some reports with the following causes of death were founded and some were unfounded: undetermined, gunshot, brain damage/shaking, and suffocation/asphyxiation. Of the 33 founded cases, 21 (63.6%) were founded for physical abuse, 14 (42.4%) for physical neglect, and one (3%) was founded for sexual abuse. The total is greater than 33 because a case could be founded for more than one category of allegation.

### Characteristics of the Victims

The age of all reported victims, as well as for victims in both founded and unfounded reports, ranged from newborn to 204 months (17 years). The median age was 8 months for all reports, 12 months for founded reports, and 4.5 months for unfounded reports. Almost 80% of victims of all reports (78.2%) as well as of founded reports (78.8%) were 24 months or younger, and 80% of victims of unfounded reports were 18 months or younger. Sixty percent of the victims of all reports (n=33), of founded reports (n= 20), and of unfounded reports (n=12) were male and 40% were female (n= 22, 13, 8). There was a small, but not statistically significant difference in the racial makeup of the founded reports compared to all reports. For all reports, 41.8% (n= 23) of victims were white, 43.6% (n=23) were black, 5.5% (n=3) were Hispanic, 3.6% (n=2) were biracial, and the race was unknown for 5.5% (n=3). For founded reports, 39.4% (n=13) were white, 48.5% (n=16) were black, 6.1% (n=2) were Hispanic, 3.0% (n=1) were biracial, and race was unknown for 3.0% (n=1). For unfounded reports, 45.0% (n=9) of victims were white, 35.0% (n=7) were black, 5.0% (n=1) were Hispanic, and 5.0% (n=1) were biracial.

The case files do not systematically record special characteristics of the deceased child, and researchers had to make judgments about what they found in the case files. Consequently, 20% of the data collection sheets record special child characteristics as unknown. [Table 3](#) shows the frequencies and percentages for special characteristics of the deceased child for all reports, founded reports, and unfounded reports. No special child characteristics were recorded in about 45% of the cases. This does not mean that the child did not have any special characteristics, only that such characteristics were not known to the CPS investigator or that they were not recorded in the case file. The three most frequently recorded child characteristics were medical problems

(n=7), premature birth (n=7), and other (n=6). Medical problems were involved about equally in founded and unfounded reports, but premature birth was more likely to be involved in unfounded reports than founded reports.

#### Characteristics of Family and Household

The mothers of the deceased children ranged in age from 16 to 46 years. Their median age at the time of the death was 25; this was the same for both founded and unfounded reports. The living arrangements in the child's home at the time of death are reported in [Table 4](#). The most common types of living arrangements were two married biological parents (n=13, 23.6%) and single mother living alone (n=12, 21.8%). The households of about 15% of the founded cases were comprised of two married biological parents, compared to 40% of the households of unfounded cases. This difference was statistically significant ( $p < .05$ ). Almost 15% of the reported cases involved households where a single parent lived with family members. This is important, because most research on child maltreatment lumps these families with other single parent families. Although the difference is not statistically significant, these households comprise a greater percentage of the unfounded cases than the founded cases. For all reports, 43.6% (n=24) of the deceased children had no siblings; this was true for 36.4% (n=12) of founded cases and 60.0% (n=12) of unfounded cases. Ten (18.2%) of the families were attached to some branch of the military, seven (21.2%) of the founded cases and three (15.0%) of the unfounded cases.

The data collection form asked for characteristics of the deceased child's household, with a checklist of 17 items. No problems were found in the case files for seven (12.7%) of all reported cases, for two (6.1%) of founded cases, and for five (25.0%) of unfounded cases. The most commonly reported household characteristics were mother abused by partner (n=15,

27.3%), other (n=14, 25.5%), insufficient income (n=10, 18.2%), and mental health problems (n=7, 12.7%). It should be noted that the data collection form had a category for alcoholism but not for other substance abuse. Therefore, other substance abuse was checked as other.

Consequently, the amount of substance abuse in the households of the deceased children is underestimated. It should also be noted that if the categories of mother abused by partner and other adult violence are combined, approximately 36% of all reported cases involved violence among adults. There are no differences in household characteristics between the founded and unfounded reports. (Table 5)

#### Characteristics of Alleged Perpetrators

The data collection form allowed for the recording of two alleged perpetrators. Only one case file indicated more than two perpetrators; that file indicated three perpetrators, but only two were recorded for research purposes. Three-quarters of the reports (n=41) included only one alleged perpetrator; this was true for 79% (n=26) of the founded cases and 65% (n=13) of the unfounded cases. The ages of alleged perpetrators ranged from 16-44 years, and the median age of alleged perpetrators for all reports, founded reports, as well as unfounded reports was 25. The alleged perpetrators were about evenly divided between males and females. All reports included 35 (52.2%) male alleged perpetrators and 32 females (47.8%). For the founded reports, there were 24 (60%) male alleged perpetrators and 16 females (40%). For the unfounded reports, there were 10 (38.5%) male alleged perpetrators and 16 females (61.5%). The recorded racial identification of the alleged perpetrators for all reports included 31 (46.3%) white, 29 (43.3%) black, five (7.5%) Hispanics, one (1.5%) American Indian, and one (1.5%) biracial. For the founded reports, the recorded racial identification of the alleged perpetrators included 21 blacks (52.5%), 16 (40%) whites, and three (7.5%) Hispanics. For the unfounded reports, the recorded

racial identification of the alleged perpetrators included 14 (56%) whites, seven (28%) blacks, two (8%) Hispanics, one (4%) American Indian, and one (4%) biracial. Although black perpetrators were slightly more likely than white perpetrators to have reports against them founded, this difference did not reach statistical significance.

The data collection form asked for the identity of alleged perpetrators, offering 14 categories of perpetrators. Eleven different categories of perpetrators were reported (see Table 6). The most common categories of alleged perpetrator for all reports were mother living in home (n=25, 37.3%), father living in home (n=13, 19.4%), and other (n=8, 11.9%). Mother living in home was also the most common category for both founded (n=13, 32.5%) and unfounded (n=12, 46.2%) cases. The other (n=8, 20.0%) category was more common for founded reports than father living in the home (n=6, 15.0%). All reports with other as alleged perpetrator were founded, as were all reports with paramour, either living in home or out of home, as alleged perpetrator.

The data collection form also asked for special characteristics of the alleged perpetrators, with all applicable items to be checked for any one perpetrator. For 11 (16.4%) alleged perpetrators, no physical, mental or emotional problems were found in the case files. The most commonly noted characteristics were other, which was recorded for 17 (25.4%) of alleged perpetrators for all reports, for 11 (27.5%) alleged perpetrators of founded reports, and for 6 (23.1%) alleged perpetrators of unfounded reports; mental/emotional problem, which was recorded for 12 (17.9%) of alleged perpetrators of all reports, for eight (20.0%) alleged perpetrators of founded reports, and for four (15.4%) alleged perpetrators of unfounded reports; and alcohol or other substance abuse, which was reported for 12 (17.9%) alleged perpetrators of all reports, for seven (17.5%) alleged perpetrators of founded reports, and for five (19.2%)

alleged perpetrators of unfounded reports. All recorded special characteristics of the alleged perpetrators are reported in [Table 7](#). What is notable about the data reported in Table 7 is the remarkable similarity between the characteristics of the alleged perpetrators in founded and unfounded reports.

### Aspects of Case Processing

Although the data collection form asked for a number of aspects of case processing, information was not available in most case files for a number of the items on the data collection form. Information was found for referrer type, previous complaint on deceased child, status of previous complaint on deceased child, previous complaints on siblings of deceased child, status of previous complaint on siblings, previous removal of deceased child from home, previous removal of siblings from home, case open with VDSS, and removal of siblings after death of deceased child.

Police or sheriff were the referrers for over half of all reports (n=32, 58.2%), founded reports (n= 18, 54.5%), and unfounded reports (n=12, 60.0%). Most of the remaining reports were referred by hospital or clinic, 20 (36.4%) of all reports, 12 (36.4%) of founded reports, and seven (35.0%) of unfounded reports. Other reports were referred by medical examiner (n=2, 3.6%), anonymous (n=1, 1.8%), and other (n=3, 5.5%). In a few cases, more than one referrer filed a report, therefore the total is greater than 55.

There was a previous CPS complaint on the deceased child in a minority of all reports (n=11, 20.0%), founded reports (n=5, 15.2%), and unfounded reports (n=5, 25.5%). Again, the lack of difference between founded reports and unfounded reports is notable. Where there were previous reports, the disposition on five previous reports could not be found in the case files, four of the previous reports had been founded, four had been unfounded, and three were under

investigation. Three of the previous CPS reports had been unfounded in cases of founded fatality reports, and two of the previous CPS reports were founded for cases of unfounded fatality reports. In other words, no clear pattern of difference between founded and unfounded reports emerged in terms of previous reports on deceased child.

Previous CPS complaints on siblings were noted in 12 (21.8%) case files. In interpreting this statistic, it is important to remember that no siblings were recorded for over 40% of the deceased children. That means that the 12 recorded previous complaints on siblings were lodged in the 28 families with children, or 42.9% of those families. Eight of the previous reports on siblings were founded, two were unfounded, and two received MRS assessment. It is interesting to note that four of the case files of founded fatality reports noted previous complaints on siblings compared to six of the case files of unfounded fatality reports. In addition, the previous complaint on siblings was founded in only one of four of the founded child fatality reports, compared to five of six of the unfounded child fatality reports. (Note: the totals are inconsistent here because the status is pending on one child fatality report and missing on another, but data on previous complaints on siblings were noted in both these cases.)

The case files indicate that only one of the reported deceased children had previously been removed from the family, and for that case child abuse or neglect was not founded for the fatality. The case files also indicate that siblings of four of the reported deceased children had been previously removed from the family; two of these were in founded reports and two in unfounded reports.

The case files indicate that nine (16.4%) of the deceased children had an open case with VDSS at the time of death; four (7.3%) were open for CPS, three (5.5%) for other services, two (3.6%) for family services, two (3.6%) for benefit program, and one (1.8%) for counseling.

Some cases were opened for more than one type of service. Two of the open cases were founded for child fatality, and five were unfounded. The status of one of the remaining open cases was pending and missing for another. One of the founded fatality reports was open for CPS and another for benefit program. Two of the unfounded reports were on families open for other services, and one each was open for counseling, family services, CPS, and benefit program.

Siblings were removed after the deceased child's death in eight (14.5%) of the reports. Again, it is important to remember that for all reports, 43.6% (n=24) of the deceased children had no siblings. This was true for 36.4% (n=12) of founded cases and 60.0% (n=12) of unfounded cases. Although data were collected on legal action taken against perpetrators it is not reported here for two reasons: (1) the case files were uneven in recording this data, and (2) many cases were still in legal process.

#### Discriminant Function Analysis

Discriminant function analysis (DFA) was used to examine what combination of child characteristics, family characteristics, nature of allegations, perpetrator characteristics, or prior DSS involvement would predict whether child abuse fatality reports would be founded or unfounded. A model that included cause of death (SIDS), living arrangements in the home (two biological parents), identity of perpetrator (paramour), DSS region, race of perpetrator (black), and previous CPS compliant on the deceased child correctly predicted case disposition in 82.0% of the cases; 93.9% of the founded cases were correctly classified with this model and 58.8% of the unfounded cases were correctly classified. Overall, the model was statistically significant (Wilks' Lambda = .612, Chi Square = 22.1,  $p = .001$ ). The eigenvalue was .635 and the canonical correlation was .623. Squaring the canonical correlation produces the percent of variation in case status that can be accounted for by the set of independent variables in the

model. In this case, 38.8% of the variation in case status is explained by a combination of cause of death, living arrangements, identity of perpetrator, DSS region, race of perpetrator, and previous CPS complaint on deceased child. The Box's M test for this model was 14.037 and was significant, indicating that the DFA assumption of equal covariance matrices may have been violated. Therefore, the results of this analysis must be interpreted with some caution. Because DFA does a listwise deletion of cases, deleting any case that is missing data on any variable, the n for this analysis is 51.

Both standardized discriminant function coefficients and structure coefficients are presented in [Table 8](#). The standardized function discriminant coefficients indicate the partial correlation of each variable to the discriminant function when controlling for other independent variables. They can be used to assess each independent variable's unique contribution to the discriminant function. The structure coefficients indicate the simple correlations between each independent variable and the discriminant function. They provide further understanding of the discriminant function model.

The findings presented in [Table 8](#) indicate that a child fatality report was more likely to be founded when the perpetrator was a paramour living either in or out of the home and when the perpetrator was black. The report was less likely to be founded if the cause of death was Sudden Infant Death Syndrome (SIDS), if the deceased child lived with two biological parents, and if there was a previous CPS complaint on the deceased child. The disposition of reports also varied by VDSS region, with reports from the Central region more likely to be founded and reports from the Northern region less likely to be founded. When controlling for other independent variables, the cause of death made the best unique contribution to the prediction of case disposition (-.785), followed by previous CPS report on deceased child (-.410), paramour as

perpetrator (.309), and living arrangements (-.297), DSS region (-.215), and race of perpetrator (.145). If cause of death is removed from the model, the model loses statistical significance.

### Discussion

Many of the findings in this study are consistent with national statistics on child maltreatment fatalities reported by the U.S. Department of Health and Human Services (2000).

- There was fairly equal split between abuse and neglect as the cause of death.
- The risk of death due to maltreatment decreased with age, with a median age of 12 months for founded reports. In fact, the victims in this study were younger than the national sample. In this sample, almost 80% of victims in founded cases were 2 years or younger, while almost 80% of the national sample were less than 5 years. It is interesting to note, however, that the victims in the unfounded cases in this study were even younger than those in the founded cases, with a median age of 4.5 months. That is probably due, in part, to the seven cases of SIDS in the unfounded reports.
- Like the national data, male victims slightly outnumbered female victims in this study.
- Also like the national data, African-American children were over-represented among child maltreatment fatalities in this study. Most of that over-representation occurred prior to case disposition by VDSS. African-American children comprised 43.6% of the reported fatalities, and 48.5% of the founded reports. This is consistent with earlier research that found that the over-representation of African-American children in the child welfare system accumulates across multiple decision points, involving actors other than child welfare workers (Morton, 1999). This study cannot clarify whether over-representation is due to the increased vulnerability of African-American children, to race-

based bias at numerous decision points, or to a correlation between race and economic status.

- Like the national data, the perpetrators in this study are young, with a median age of 25. Likewise, the mothers of the deceased children are young, with a median age of 25.
- Like national data, this study found that the majority of child fatalities due to maltreatment involve children and families that are not known to the child protective agencies. None of the fatalities involved children in foster care. None of the children in founded reports and one child in unfounded reports had been removed and returned to the family prior to the death. However, five of the children in founded reports had been the subject of a previous CPS complaint.

There are also some ways that the findings in this study differ from national data (U.S. Department of Health and Human Services, 2000).

- While 80.6% of the child maltreatment fatalities nationally were perpetrated by one or both of their biological parents, that was true for slightly less than half (47.5%) of the founded fatalities in this study. Paramours were found to be the perpetrators in this study as often as fathers (20.0%). Paramours and step-parents together were found to be the perpetrators slightly more often than biological fathers (25.0% versus 20.0%).
- Although the national data found females to be the perpetrators more often than males, this study found the opposite. Males were perpetrators in 60% of the founded reports and females were perpetrators in 40%. However, females were the alleged perpetrators more often in the unfounded reports.

Because there was no comparison group that did not involve child fatality, this study is limited in ability to identify child, family, and perpetrator characteristics associated with child

maltreatment fatality. Furthermore, data on child, family, and perpetrator characteristics are limited in this study by the exclusive use of agency records for data collection. Many child, family, and perpetrator characteristics would not become evident during a child maltreatment fatality investigation, and the case files were uneven in reporting child, family, and perpetrator characteristics. It is possible that further information on child, family, and perpetrator characteristics could be gleaned from court records.

Keeping these limitations of the present study in mind, there are some observations about child, family, and alleged perpetrator characteristics that can be gleaned from the study. The most important observation is how similar the child, family, and alleged perpetrator characteristics are for founded and unfounded reports. In almost one-half of the child fatality reports, both founded and unfounded, the case files indicated no special characteristics of the deceased child. The same three child characteristics were the most frequently recorded characteristics for both founded and unfounded cases: medical problems, premature birth, and other. Likewise, the same household characteristics were the most frequently reported characteristics for both founded and unfounded cases: violence in the home, other, mental health and substance abuse problems, and insufficient incomes. And, the same characteristics of alleged perpetrators were the most frequently cited for both founded and unfounded cases: other, mental/emotional problems, and alcohol or other substance abuse. The frequent use of the other category suggests that there is much greater diversity in child, family, and alleged perpetrator characteristics than the data collection instrument could accommodate. That adds further credence to the idea that no clear profiles of child, family, and perpetrator characteristics can be described for child maltreatment fatalities, other than those related to age and race identified earlier.

Some differences were found between the living arrangements of deceased children in founded reports and those in unfounded reports. The most frequent living arrangement for founded reports was single mother living alone (n=10, 30.3%), and the most frequent living arrangement for unfounded reports was two married biological parents (n=8, 40.0%). It is important to note that many researchers lump all single mothers together, but this study indicates that it is important to separate out single mothers living alone, from those living with paramours, and those living with family members. In this study, reports with single mother living with paramour were more likely to be founded than unfounded, and those with single mother living with other family members were slightly more likely to be unfounded than founded. This is consistent with earlier research that found that the presence of biologically unrelated adults in the household increases the risk of maltreatment, but no risk is associated with biologically related adults in the household (Stiffman, et al., 2002). The finding in this study that single mother living alone was the most common household type for founded reports is not consistent with a recent finding that only one biological parent living alone does not increase the risk of fatal child maltreatment (Stiffman et al., 2002).

A previous CPS complaint on the deceased child was filed in 20.0% of the cases. But, again, there is a notable lack of difference between the founded and unfounded reports, with the child fatality unfounded in half of the cases with previous CPS complaints on the deceased child. Likewise, previous complaints on siblings of the deceased child were noted in 21.8% of the child fatality reports. And, again, the unfounded cases were just as likely as the founded cases to have previous reports on siblings.

Whether the child maltreatment fatality report was founded or unfounded, all of the reported children are deceased, and, therefore, their situations can be considered precarious prior to their

death. The children were vulnerable because of their young age and the relative youthfulness of their parents. It is likely that problems in the household are under-reported in the case files, and, yet violence was noted in 36.4% of the reported households, including 25% of the households of unfounded reports. Although the case files did not include much information on the family's use of services prior to the child's death, it appears that these families, like those in other studies of child maltreatment fatalities (U.S. Department of Health and Human Services, 2000), were receiving few services. It is hard to tell whether they were underutilizing services, or they were facing gaps in services.

The similarity of the child, family, and alleged perpetrator characteristics of the founded and unfounded cases is further highlighted by the DFA. The model of prediction that reached statistical significance is still weak in predictive power, explaining only 38.8% of the variation in case status. The best unique contribution to the prediction of case disposition was made by cause of death (SIDS). That finding has little practical meaning, however, because SIDS deaths are by definition considered to be due to natural causes. It does suggest, perhaps, that CPS investigators rely heavily on medical examiner reports for determining disposition of child maltreatment fatality reports. That possibility is worth further study, but the data collected for this study cannot clarify the issue. When cause of death is removed from the DFA model, the model loses statistical significance, suggesting no clear pattern of difference between the founded and the unfounded cases.

The case files included very little data that would shed light on the financial circumstances of the households of the deceased children. That is the consistent finding among researchers using child welfare case files. Perhaps, the best way to get some understanding of financial

characteristics and other quality of life characteristics of families reported for child maltreatment fatalities is to supplement case file information with geographical mapping.

### Recommendations for Further Research

VDSS should decide what types of data need to be systematically kept on child maltreatment fatality reports. Uniform forms and protocols for collecting data, and a system for monitoring the collection of data, should be created. The following suggestions are made for further research:

1. Once the 2000 census data for Virginia are available, geographic mapping should be undertaken to map the spatial distribution of child maltreatment fatalities as they correspond to other social indicators such as social economic status, family structure, race and ethnicity, business and industrial development, employment, educational attainment, housing stock, and mobility.
2. Further research is needed to develop understanding of the processes by which African-American children become over-represented in child welfare system. This research must go beyond existing data and look at multiple decision makers and decision points.
3. Further research is needed to understand the patterns of social service utilization of families where child maltreatment fatalities occur and the gaps in services, particularly for poor families. Again, this research must go beyond existing data.
4. Further research should focus on comparisons of deaths ruled as SIDs and deaths ruled as child maltreatment.

### Recommendations for Practice

Presentations at a recent conference on positive systems of child welfare indicate that, around the industrialized world, child welfare agencies are finding that they cannot prevent all child maltreatment fatalities. They are also facing high caseloads and high worker turnover rates (Positive Systems of Child and Family Welfare, 2002). It is important to put this growing crisis

in child welfare into context. Families raising children are doing so in a world of growing economic inequality and increasing instability in the labor work. Parents are working more hours than in recent eras and social service supports have dwindled. More children are being raised by single parents, and geographic mobility often precludes extended family support (Hutchison & Waldbillig, forthcoming). In this context, children are becoming more vulnerable.

In Virginia, like the rest of the industrialized world, we face a complex problem to ensure the welfare of children. The solutions lie beyond the scope of any one agency. There is much that needs to be done, but the discussion here is confined to those recommendations that flow from the current research. The following general recommendations are indicated by the findings of this study:

- Because child fatalities are most common among infants and toddlers, support for new parents is important. The support needed includes but goes well beyond parent education, including home visitation, medical supervision, child care for working parents, crisis care and crisis hotlines, and emergency financial assistance. Although some of this support already exists, it needs to be provided in a more systematic way.
- Given the high level of family violence found in the households of the deceased children in this study, VDSS should develop interagency collaborative initiatives with other agencies, such as schools, public health, churches, domestic violence shelters, and so forth, to address the impact of family violence on children.
- Given the fact that many of the families in this study were unknown to VDSS, and perhaps to other social agencies as well, VDSS should continue to consider models of interagency collaboration that provide active outreach to families at risk.

- Because the solutions to child maltreatment fatalities lie beyond the scope of any one agency VADSS staff should continue to work with other relevant agencies – such as health care providers, mental health providers, substance abuse treatment providers, day care providers, community centers, churches, police, domestic violence workers, and public housing - to create needed programs and services.
- Different models of collaboration can be explored for rural and urban areas. In rural areas, particular attention should be paid to natural helping systems. In both rural and urban areas, co-location of service providers, blended funded, and cross-training could be considered.
- VADSS might consider outposting CPS workers to locations such as low-income housing projects or community centers to move them into the life spaces of fragile families.
- VADSS should explore working with other agencies and community leaders to develop community collaboratives for child protection.
- VADSS could work with other agencies to develop a state level collaborative council for promoting child and family health and well-being. Such councils already exist in 27 states.
- VADSS should develop an evaluation plan for any programmatic innovations undertaken.
- VADSS should explore ways to promote coordination of the work of the regional and state level Child Fatality Review Teams for the purposes of data collection about child fatalities in fragile families.
- Given the vital importance of the OASIS system for tracking trends in child maltreatment fatalities and providing information that could lead to reduction of child fatalities, VDSS

should continue to refine the system, explore difficulties workers are having with the system, and garner worker cooperation in collecting vital data.

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Table 1

*DSS Region and Case Status*

DSS Region	Reports					
	Total		Founded		Unfounded	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Central	11	20.0	9.0	27.3	2	10.0
Eastern	23	41.8	14	42.4	8	40.0
Northern	11	20.0	5	15.2	6	30.0
Piedmont	6	10.9	3	9.1	2	10.0
Western	4	7.2	2	6.1	2	10.0
Totals	55		33		20	

Table 2

*Causes of Death*

Cause	<i>n</i>
Brain Damage/Shaking	7
Internal Injury	6
SIDS	6
Undetermined	6
Gunshot	5
Drowning	5
Skull Fracture	3
Suffocation/Asphyxiation	3
Other Neglect	3
Stabbing	2
Burns/Scalds	2
Sex Abuse	2
Abandoned Soon After Birth	2
Other	2

Cause	<i>n</i>
Other Abuse	1
Medical Neglect	1
Fire	1
Hypothermia	1
Motor Vehicle	1

Table 3

*Special Characteristics of Deceased Child*

Child Characteristic	Reports					
	Total		Founded		Unfounded	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
None	24	43.6	15	45.5	9	45.0
Unknown	11	20.0	6	18.2	3	15.0
Medical Problems	7	12.7	4	12.1	3	15.0
Premature Birth	7	12.7	2	6.1	5	25.0
Other	6	10.9	3	9.1	3	15.0
Unwanted Pregnancy	3	5.5	3	5.5	0	
Behavioral Problems	2	3.6	2	6.1	0	
Previously Abused/Neglected	2	3.6	2	6.1	0	
Mental Retardation	1	1.8	0		1	5.0
Emotional Disturbance	1	1.8	1	3.0	0	
School Problem	1	1.8	1	3.0	0	
Criminal Justice Problem	1	1.8	1	3.0	0	

Table 4

*Living Arrangements in Child's Home at the Time of Death*

Living Arrangement	Reports					
	Total		Founded		Unfounded	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Single Mother Living Alone	12	21.8	10	30.3	2	10.0
Single Father Living Alone	2	3.6	2	6.1	0	
Single Mother Living with Paramour (not father)	8	14.5	6	18.2	2	10.0
Single Parent Living with Family Members	8	14.5	3	9.1	5	25.0
Two Married Biological Parents	13	23.6	5	15.2	8	40.0
Two Unmarried Biological Parents	1	1.8	1	3.0	0	
One Biological Parent and One Step-parent	4	7.3	2	6.1	1	5.3
Two Parents Living with Family Members	1	1.8	1	3.0	0	
Other	4	7.3	3	9.1	1	5.0
Totals	53		33		19	

Table 5

*Characteristics of Child's Household*

Household Characteristic	Reports						
	Total		Founded		Unfounded		
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	
Mother Abused by Partner	15	27.3	9	27.3	4	20.0	
Other		14	25.5	7	21.2	6	30.0
Insufficient		10	18.2	6	18.2	3	15.0
Mental Health Problems	7	12.7	2	6.1	4	20.0	
Alcoholism		5	9.1	3	9.1	1	5.0
Other Adult Violence		5	9.1	2	6.1	1	5.0
Housing Problems		5	9.1	3	9.1	1	5.0
Marital Problems	4	7.3	2	6.1	2	10.0	
Physical Health Problems	3	5.5	2	6.1	1	5.0	
Pregnancy/New Child		3	5.5	1	3.0	2	10.0
Authoritarian Discipline	2	3.6	2	6.1	0		

Table 6

*Identity of Alleged Perpetrators*

Identity of Perpetrator	Reports					
	Total		Founded		Unfounded	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Mother Living in Home	25	37.3	13	32.5	12	46.2
Father Living in Home	13	19.4	6	15.0	7	26.9
Other	8	11.9	8	20.0	0	
Paramour Living in Home	5	7.5	5	12.5	0	
Step-parent	4	6.0	2	5.0	1	3.8
Baby Sitter	4	6.0	1	2.5	3	11.5
Paramour Living Out of Home	3	4.5	3	7.5	0	
Father Living Out of Home	2	3.0	2	5.0	0	
Siblings in Home	1	1.5	0		1	3.8
Mother Living Out of Home	1	1.5	0		1	3.8
Other Relative Living Out of Home	1	1.5	0		1	3.8
Totals	67		40		26	

Table 7a

*Special Characteristics of Alleged Perpetrators-Part 1*

Characteristic	Reports					
	Total		Founded		Unfounded	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Other	17	25.4	11	27.5	6	23.1
Mental/Emotional Problem	12	17.9	8	20.0	4	15.4
Alcohol or Other Subs. Abuse	12	17.9	7	17.5	5	19.2
No Physical, Mental, or Emotional Problem	11	16.4	4	10.0	7	26.9
Abused/Neglected as Child	5	7.5	2	5.0	2	7.7
Mental Retardation	4	6.0	2	5.0	2	7.7
Abused by Partner/Spouse	4	6.0	3	7.5	1	3.8

Table 7b

*Special Characteristics of Alleged Perpetrators-Part 2*

Characteristic	Reports					
	Total		Founded		Unfounded	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Medical Problems	2	3.0	2	5.0	0	
Learning Disability	2	3.0	1	2.5	1	3.8
Physical Handicap	1	1.5	1	2.5	0	
Adheres to Culturally Accepted Practices	1	1.5	1	2.5	0	
Lacks Knowledge of Child Development	1	1.5	1	2.5	0	
Lacks Knowledge of Child's Particular Problems	1	1.5	1	2.5	0	
Lacks Knowledge of Community Standards	1	1.5	1	2.5	0	

Table 8

*DFA Standardized Discriminant Function Coefficients and Structure Coefficients*

Independent Variable	Standardized Discriminant Function Coefficients	Structure Coefficients
Cause of Death (SIDS)	-.785	-.785
Living Arrangements (2 biological parents)	-.297	-.378
Identity of Perpetrator (paramour)	.309	.345
DSS Region	-.215	-.293
Race of Perpetrator (Black)	.145	.271
Previous CPS Complaint on Deceased Child	-.410	-.215

*Note.* N=51